

D21D

TREATMENT OF THE MATERIALS BEFORE PASSING TO THE PAPER-MAKING MACHINE

Definition statement

This place covers:

Beating and refining methods and equipments for fibrous materials; purification methods and equipments for pulp suspensions acting by mechanical means, i.e. straining, screening, centrifugal cleaning, sorting, de-aeration; tanks for storing or agitating pulp.

References

Limiting references

This place does not cover:

Methods for making pulp by refining wood chips	D21B
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Discs for beating or refining in general	B02C 7/00
Cyclones in general	B04C

Special rules of classification

Subgroups and head groups.

If a document concerns embodiments which are covered by several subgroups dependent on a higher hierarchy group, the following rules apply:

- the specific technical information relevant for some of the subgroups is classified in all said subgroups;
- if relevant, the structural association (e.g. the combination) of the elements covered by the subgroups is classified in the head group;
- analogously, if generic technical information common to all of the subgroups is disclosed and only schematic embodiments of the specific subgroup embodiments are represented, the documents is classified in the head group only.

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Hollander	special historical equipment for beating fibrous suspensions, see definition statement of D21D 1/02
Beating	treatment of fibrous suspensions in Hollander type equipment in order to fibrillate, shorten or flexibilize fibers
Refining	treatment of fibrous suspensions for the same purpose in all other types of equipment
Jordan	refiner having a frusto-conical rotor revolving inside a complimentary stator
Bed plate	stator of Hollander or Jordan devices

D21D 1/00**Methods of beating or refining; Beaters of the Hollander type (knotter screens [D21F](#))****Definition statement**

This place covers:

Methods of beating and refining of pulp fibers in general.

References**Limiting references**

This place does not cover:

knotter screens	D21F
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D21D 1/004**{Methods of beating or refining including disperging or deflaking}****Definition statement**

This place covers:

Disperging (i.e. separating rather small impurities sticking to the surface of a fiber) or deflaking (i.e. separating flakes or flocs formed by fibers into the individual fibers again) methods and equipments for fibrous materials.

D21D 1/006**{Disc mills}****Definition statement**

This place covers:

Disc mills only if particularly suitable for disperging or deflaking.

D21D 1/008**{Discs}****Definition statement**

This place covers:

Discs for disc mills only if particularly suitable for disperging or deflaking.

D21D 1/02**Methods of beating; Beaters of the Hollander type****Definition statement**

This place covers:

Treatment in Hollander equipment, i.e. in a device using at least one wheel like beating rotor (roll) equipped with beating tools (knives) revolving in a trough having a beating stator (bed plate), also

equipped with beating tools (knives), in which trough the suspension is circulated to pass multiple times through the beating zone formed between the rotor and the stator.

D21D 1/34

Other mills or refiners

Definition statement

This place covers:

Refiners or mills not provided before, for example cylindrical rotors and stators, belt refiners, kneaders causing a refining action, compression refiners, planetary gear like equipment.

References

References out of a residual place

Examples of places in relation to which this place is residual:

Beaters	D21D 1/02
Jordans	D21D 1/22
Ball or rod mills	D21D 1/28
Disc mills	D21D 1/30
Hammer mills	D21D 1/32

D21D 1/40

Washing the fibres

Definition statement

This place covers:

Equipment and methods for washing and dewatering pulp.

References

Limiting references

This place does not cover:

Washing pulp from cooking liquors	D21C 9/02
Recovering fibrous materials from suspensions in the paper machine approach system or white water	D21F 1/66 , D21F 1/74 , D21F 1/76 , D21F 1/78

D21D 5/00

Purification of the pulp suspension by mechanical means; Apparatus therefor (centrifuges, cyclones [B04](#))

Definition statement

This place covers:

Purification methods and equipments for pulp suspensions acting by mechanical means, i.e. straining, screening, centrifugal cleaning, sorting, de-aeration; tanks for storing or agitating pulp.

References

Limiting references

This place does not cover:

centrifuges, cyclones	B04
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Degasification of liquids in general	B01D 19/00
Other filters with filtering elements stationary during filtration, e.g. pressure or suction filters in general	B01D 29/00
Sieving, screening, sifting, or sorting solid materials using networks, gratings, grids, or the like, in general	B07B 1/00

D21D 5/005

{Forming fibrous aggregates}

Definition statement

This place covers:

Forming fiber bundles by agitating suspensions; magnetic deinking of suspensions by attaching ink particles in the paper pulp to a magnetic carrier material with the help of an agglomeration agent.

D21D 5/18

with the aid of centrifugal force

Definition statement

This place covers:

Purification, sorting and fractioning methods using centrifugal force.

Equipment for performing the methods.

D21D 5/24

in cyclones

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

cyclones in general	B04C
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D21D 5/26

De-aeration of paper stock

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Degassing of liquids in general	B01D 19/00
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D21D 99/00

Subject matter not provided for in other groups of this subclass

Definition statement

This place covers:

Subject-matter that fits within the scope of the subclass but is not covered by any of the other groups, such as for example fractioning methods, methods dividing the total suspension stream in portions, not for cleaning purposes, but for obtaining fibre fractions of different properties, e.g. separating longer from shorter fibres, finer from coarser fibres; and treating at least one of these portions differently from remaining portion(s) in subsequent process steps.